Design of Open Channels

Fall 2019

COURSE INFORMATION: Design of Open Channels. Credits 4 hrs.

COURSE SCHEDULE: Lecture – Sunday 8:30 – 10:30 AM, Tuesday 11:30 – 1:30 PM

TEXTBOOK(S):

- Chow, V. T. 1959. **OPEN-CHANNEL HYDRAULICS**. McGRAW-HILL CLASSIC TEXTB®K, John Wiley and Sons, New York.
- Gupta, V. 1979. **Theory and design of irrigation structures Vol. II: Canal and Storage works**.

INSTRUCTOR: Abdul-Sahib T. Al-Madhhachi, Ph.D., F.E., Associate Professor and Hydraulic Laboratory Supervision, Water Resources Engineering, College of Engineering, Mustansiriyah University.

COURSE OBJECTIVES: Open channel system, basic principles of open channel flow. Topics include open channel flow principles, design of unlined channels, lined channels, design of stable channels, and design of grass channel.

GRADING: Homework 15%, Exam 25%, Final Exam 60%.

HOMEWORK ASSIGNMENTS (15%): Homework assignments should be done neatly with the problem defined and solution clearly outlined. Final answers should have appropriate units and should be circled or underlined. The more clearly a problem is presented and solved, the more likely you will receive partial credit. Late homework will not be accepted unless you have a valid university excused absence. Make sure what you turn in as your work, really is your work. Simply copying another student's homework solution is a breach of academic honesty and will result in a zero for all involved parties. Homework is due at the beginning of class on the day assigned.

EXAM or QUIZZES (25%): Quizzes or one exam (depend on student desire) will be given periodically throughout the semester. Quizzes or one exam will consist of qualitative questions including definitions, concept questions, and writing expressions or equations and quantitative questions.

FINAL EXAMS (60%): The final exams will consist of a qualitative and quantitative section. The qualitative section will be closed book/closed notes, and will consist of definitions, concept questions, and writing expressions or equations. The quantitative section will be closed book, and will consist of 3-5 problems of similar nature, but not exactly like, the assigned homework problems, example problems illustrated during lectures, and example problems in the textbook.

ATTENDANCE AND RESPECT: Attendance is required. When you are in class, please be respectful to other students by being on time to class, not leaving class early, and not doing other work during class.

PRELIMINARY COURSE SCHEDULE

Chapters	Topics
I	Syllabus/Introduction – Basic principles of open channels
II	Kinds of Open Channel, Channel Geometry and their elements
VII	DESIGN OF CHANNELS FOR UNIFORM FLOW, NONERODIBLE CHANNELS
VII	The Minimum Permissible Velocity, The Best Hydraulic Section
VII	ERODIBLE CHANNELS WHICH SCOUR BUT BO NOT SILT
VII	The Tractive Force, Permissible Tractive Force
VII	The Stable Hydraulic Section
VII	GRASSED CHANNELS
	Final Exam